**Robert Freudenberg, Director for Energy and the Environment at the Regional Plan Association**

Studies the infrastructure needs of 31 counties in the Tristate region

*There's been a ton of focus in -- 3 years since Sandy on reducing vulnerabilities to residential parts of NJ's coast, by elevating homes, restoring beaches, + building dunes. But there's another part of the coastline in -- northern part of the state -- such as along Newark Bay + the Arthur Kill -- that's highly industrialized, w/ refineries, tank farms, + oil terminals. And many of these sites flooded during -- storm, releasing hundreds of thousands of gallons of pollutants into the waterways.*

*Is this something your group has looked at, and are we doing enough to fix the problem?*

2:05 - **"I think what this demonstrates is a vulnerability in our region, that not a lot of us are doing enough to look at. I think we are a region developed around its coasts. We are a region of water, and we've developed our coastlines, our shorelines and our estuaries, and that includes our industrial areas.** So we are taking a look at the risks that this poses as we work on our 4th regional plan. We're highlighting all of the important things that are in the flood zones today, and importantly in the flood zones tomorrow. **And industrial sites and brownfields and refineries are a large part of what's at risk.** So we are looking at that, and we believe that not enough is being done to focus on that."

*Why do you suppose these sites haven't gotten as much attention?*

2:53 - "I think a large part of it kind of the personal stories of the residential areas and the natural systems that were lost. These were kind of public goods and individual homeowners with stories. I think that the private industry and the brownfields and the refineries are kind of entities unto themselves. So they kind of manage the things by themselves. And they don't… You know, there were stories about the pollution that came from them, but less focus on what to do about that in the public realm. I think less public dollars tend to flow to these because they're private industries. And so there's less, maybe accountability, to the public because of that."

*It's an individual facility if they get damaged, and they bear the cost of rebuilding it, but because they deal with these chemicals and potential pollutants and hazards, it could potentially affect thousands of people who live downstream. It's not just the effect on the facility itself, right?*

3:56 - "Absolutely, I mean **these industries are responsible for chemicals and toxins, oil, raw sewage that could impact the entire region. I think we've made a lot of progress over the past decades in securing clean water. I think climate change and the flooding that results from it, and sea level rise represents a major threat to undoing that work by flooding these sites with these toxins on them.** So I think what we see is a polluter pays principle. It's things like that that have in the past made cleanup of sites the responsibility of private operators, and I think that should also apply in this case in securing these sites."

*I reached out to NJDEP to ask if any new state regulations or strategies have gone into effect in the aftermath of Sandy to reduce -- likelihood of this sort of thing happening again, + state officials pointed me to pre-existing regulations that largely leave mitigation measures up to the individual site owner. They*

*said facilities are required to perform -- detailed analyses to identify all possible hazards including hurricanes, + take action to address those hazards to minimize the risk of accidental releases.*

*I also spoke to several site operators -- Phillips 66, Kinder Morgan and Motiva -- and all said they've taken additional steps since Sandy to reduce their vulnerabilities.*

*So what's wrong with leaving this up to the private sector -- who might know better than any regulatory authority how to minimize their own risks -- and dealing with this problem on a case-by-case basis?*

5:31 - "Yeah, I think this is one of those situation where the private sector needs to be responsible for it, but they also have responsibility to be sharing their information publically, to make sure that the public is aware of the risk that's posed by their sites. Essentially, this is a case where these are private sites, but they're being inundated with water that kind of doesn't stay on that site. So once it leaves their site, it becomes a risk off that site. And these are often facilities that are located either adjacent to natural systems or residential neighborhoods. Not to mention the fact that the waterways transmit the toxins throughout the region. So I think because of that, there's a public responsibility on these private companies to have a greater transparency around this and responsibility to the public good around them."

*Why do you feel we need a bigger regional or comprehensive approach instead of just dealing with sites on a case-by-case basis?*

6:46 - "I think again, this is because it is something that transcends that particular site. This is an opportunity, given that we are an industrial region, that we work together with the public and the private interests to ensure that these risks are kind of approached regionally and collaboratively, recognizing that no single site… that these elements are not contained on one single site. So I think this argues for a regional approach to managing the oil, the toxins, the raw sewage on these sites, to ensure that the public health and the natural systems in our region are protected."

*But there's not a simple solution, right? I mean, it's fairly easy to elevate a house or build a dune on a beach, but some of these sites are dozens or even hundreds of acres, + they're built right up to the water's edge. Aren't there just enormous challenges + expenses that would be involved?*

7:44 - **"Yeah, I mean there's no doubt that these are complicated sites. They're large, with large waterfront-facing areas. There's a lot of infrastructure on them to kind of keep dry and keep operating. And there's a significant amount of hazardous material on them, whether it's their current processes or legacy toxins. So I think the idea that they can I guess exist and manage this risk without opening up and taking a more regional approach, I think all things need to be reconsidered in this new age of climate change. You know, flood waters are going to reach areas that they hadn't before, and this is not the kind of situation where a simple solution applies. So it's going to require new solutions. It's going to require collaborative approaches. It's going to require new thinking on how we approach these things."**

*What sorts of possible solutions should we be looking at?*

8:52 - "Well I think there's one thought that you could recognize that industries don't operate in a vacuum. That they are often contiguous with each other, that they are spread across a large area. So maybe there

are efficiencies even in finding funding together or making these changes together so you don't just wall off one site while the other one isn't. So opening up the boundaries between these places to work together to secure them. They're also in a lot of cases parts of neighborhoods. Though they're segregated from the neighborhoods or walled off. But recognizing that they're part of a larger community and not just individual an individual site, isolated from the rest. **So a lot of this will involve a change in thinking, a change in how we think about these sites and how industries think about themselves as kind of part of the community. I think the other thing is the state can take a larger role in not just requiring plans, but really opening it up to the public, making this more of a public accountability effort to see what can be done."**

*So a lot of this would come down to building sea walls?*

10:13 - "I think sea walls are an important part of this. You know, the Passaic Valley Sewage Commission… they're building a wall for a 500 year storm. That makes a lot of sense. That's a good thing. I think we should also consider more natural solutions. Are there natural restorations that could help with this as well. that can contain toxins or absorb wave action. There's more that can be done than just building walls, and I think that should be considered as well [baby crying in background]. It can be maybe the easy solution, even though it takes years to just build walls and engineer our way out of it, but I think there's a role for nature to play in here too. I think these industries can and should be open to that as well."

*Can you point to examples from other places?*

11:05 - "I know NYC is working on a set of guidelines. They're working with their industries to come up with an approach that will be released in 2016, so we don't know what that looks like yet. But they recognize the fact that the industry that remains in NYC is an important part of the community and needs to be accountable to this. I don't have a good example off the top of my head of an industry that's doing a great job with this. I think unfortunately, too often the case… I guess industry or companies are reactive in this case instead of proactive. I do think again that Sandy and Irene have issued a wakeup call that water is going to reach places it hadn't before. And that this is something that will need to be on the radar of all these companies and industries. And so I think -- as horrible as Sandy and Irene were -- I hope that this starts a new dialogue around these sites. We haven't seen that so much yet, and so I fear that it may take another storm and more pollution to do that, but I hope that with the efforts that these companies are going through now, they would see the benefit of getting ahead of this and working together on it."

*You're saying that even though there's no simple solution, we still need to be having the conversation…*

12:30 - "With the risks this poses to the natural environment and public health, and with the climate risks that are only increasing and going to increase the amount of flooding and storms that occur, it would be irresponsible on the public and private sectors' part to not address this head-on."

**By 2050, 50% of our energy-generating capacity will be in the floodplain. Utilities need to step up**

**Nearly half of wastewater treatment plants will also be threatened by rising floodwaters by the middle of the century.**

**He says building in resiliency will take time, so we need to start planning now:**

**13:52 - “We’re really in a race against the clock, against the next big storm. I think we all realize and more attention should be paid to the impact that this has on our waterways and make sure we don’t turn back the clock on a lot of the environmental protections that we’ve made over the past few decades.”**